

Author's response

We thank the reviewer for the careful reading of our revised manuscript and for the positive evaluation. We appreciate the helpful comments, which have improved the clarity and presentation of the manuscript. All comments have been addressed in the revised version. Our point-by-point responses are provided below.

5 **Response to Report #1: Anonymous Referee #2, 17 Jul 2026**

General

The authors replied very comprehensively and addressed the comments raised in the first version of the manuscript. I suggest publication of the manuscript after some minor comments listed below are taken into account for the final version.

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Reply

1: Fig. 3 right, Fig. 8 and Fig. A14: The colorbar should be monotonic increasing (i.e. no white color in the middle).

15 **ANS:** We have revised the colorbars of Fig. 3, Fig. 8 and Fig. A14 by using a more appropriate colormap without a white midpoint.

2: Fig. 10 and Fig. A15: There is a typo in “median” on the x axis of each sub-figure.

ANS: We thank the reviewer for noticing this typo. It has been corrected.

20 **3: Figures A1 and A2: To make the comparison fair between past2k simulation and the ERA5 the period used should at least be similar, i.e. for the overlapping period in the late 20th and early 21st century. In Fig. A2 the units are missing as labels and/or within the Figure caption.**

25 **ANS:** We agree with the reviewer and have recomputed the diagnostics using the common 1940–2014 period shared by ERA5 and the IPSL-CM6A-LR past2k simulations. The captions of Fig. A1 and Fig. A2 have been updated accordingly. We have also added the units to Fig. A2.

4: Figures A4 and A5: It should be mentioned in the Figure caption that the units in the EOFs are dimensionless, because the EOFs are based on the normalized covariance matrix.

30 **ANS:** We thank the reviewer for this suggestion. We have revised the captions of Figs. A4 and A5 by adding the following sentence: "The spatial patterns are dimensionless, as the EOF analysis is performed on the normalized covariance matrix.".

Additional corrections

In addition to the changes above, we corrected two minor formatting issues identified during the revision. First, the caption
35 of Table A1 has been formatted in bold to match the journal style. Second, the typographical error “9Confidence” at the
beginning of the caption of Table A2 has been corrected to “Confidence”.